



Water Quality NewsFlash

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Brake Pads and Copper – Caltrans supporting watershed modeling – The Brake Pad Partnership is investigating the possible impacts on water quality of copper used in brake pads. The BPP has completed eight scientific reports to support interlinked air and watershed modeling of the environmental fate of copper from brake pad wear debris. (Some effort has also gone into analyzing other constituents of brake pads including iron, which is a critical concern in runoff in the Lake Tahoe basin.) Caltrans has stepped in to support the next phase which is watershed modeling to better define how the copper residues make their way into receiving waters. This modeling will look at all sources including brake pads, “architectural” copper, disinfectants, etc. A draft modeling report is due next summer and a final by year end.

Air deposition modeling indicates that brake pad copper spreads in urban watersheds due to aerial dispersion and re-suspension of the fine particles that wear off brake pads during use. Aerial deposition of brake pad copper is primarily a localized phenomenon related to traffic levels in a watershed and is not readily captured by traditional air quality monitoring methods. Copper from brake pads dissolves relatively easily in the environment and appears to be the largest source of copper in urban runoff. Copper is one of the constituents of urban runoff that most consistently exceeds water quality objectives at the point of discharge, however, it is less certain that these exceedances translate into water quality impacts at least in some waters (see *NewsFlash 06-49*). Several California TMDLs target copper together with other metals.

Brake pad manufacturers working with the BPP have agreed to voluntarily introduce new products within five years if brake pad wear debris is found to be a significant cause of surface water impairment. Unfortunately, copper use in brake pads on new cars increased about 60 percent from 1998 to 2004 due to formulation changes to meet new vehicle safety standards. Currently, all manufacturers participating in the BPP have research programs to develop pads with low or no copper. At least one manufacturer makes heavy metal-free replacement brake pads; however, it is not known (due to trade secret protections) if any low/no-copper pads are used in new cars. BPP *Fall Update* with summary of studies and future plans:

<http://www.suscon.org/brakepad/pdfs/UpdateFall2006.pdf> Additional BPP information and reports:

<http://www.suscon.org/brakepad/> ; Similar studies are being done in Europe due to water quality concerns as well as concerns that roadside copper may build up to levels affecting soil biota: www.mai.liu.se/ties2006/tb/BergbackTIES2006.ppt

Caltrans District Stormwater Contacts – Listed on website – The Caltrans site lists the District storm water contacts as well as HQ staff involved in production of the SWMP, public outreach, and other management functions:

<http://www.dot.ca.gov/hq/env/stormwater/contact/index.htm>

WQ NewsFlash is a weekly update of storm water and related news for the Department. *Verify information before taking action on these bulletins.* Contact Betty Sanchez, Betty_Sanchez@dot.ca.gov (916) 653-2115, or Fred Krieger, (510) 843-7889, fkrieger@msn.com with questions or to be added or deleted from e-mail list. Posted online at: <http://www.dot.ca.gov/hq/env/stormwater/publicat/newsflash/index.htm>